

Routine Form EIA-895 Edit Checks

Each filing of the Form EIA-895 is manually checked for reasonableness and mathematical accuracy. Volumes are converted, as necessary, to a standard 14.73 psia pressure base. Value data are compared to the previous year's data for reasonableness. When data on nonhydrocarbon gases removed, gas vented and flared, and gas used for repressuring are not reported for a State that historically reported one or more of these items, a volume is imputed. The imputation is based on the average ratio of gas volumes in the missing category to total gross withdrawals in States with values reporting gas in that category. This average ratio is applied to the volume of total gross withdrawals reported by the State to calculate the volume for the missing items. State agencies are contacted by telephone in order to correct errors. Amended filings or resubmissions are not a requirement, since participation in the survey is voluntary.

Comparison of the Form EIA-895 with Other Data Sources

Annual production data, as reported on the Form EIA-895, are compared to the sum of monthly data previously reported on the Monthly Schedule. The comparison is made in order to assure the reasonableness of the data reported on the Form EIA-895, Annual Schedule. Any significant differences are resolved by contacting the reporting State.

For discussion of the comparison of production data collected on Form EIA-895 and that collected on Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves," see the EIA report, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1996 Annual Report*.

Electric Utility Data

The electric utility data published in this report are taken from the Forms EIA-759, "Monthly Power Plant Report" and FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." These data were used in order to maintain consistency among EIA publications. Electric data are necessary on the Form EIA-176 to provide a supply/disposition balance on the form. Differences in the two surveys are apparent in the results published in Table 15, "Natural Gas Deliveries to Consumers by State," and Table 18, "Natural Gas Delivered to Electric Utilities for the Account of Others by State," where volumes in Table 18 sometimes exceed volumes in Table 15. A State-by-State comparison of the reported volumes of natural gas, as collected on the Forms EIA-176 and EIA-759 is shown in Table A1. The national totals differ by 236 billion cubic feet or 10 percent in relative terms.

While processing the data reported on the Form EIA-176, the EIA made special efforts to determine the reasons for the differences in reporting of electric utility data on the Forms EIA-176 and EIA-759. Typical instances of misreporting occurred in the reporting of gas delivered to electric utilities for the account of others. Some companies reported these deliveries under sales for resale. Others reported them under transportation, exchange and/or storage deliveries. A few others reported them under transported to industrials. Companies making mistakes were asked to refile, and new companies were asked to file when they were found making deliveries of gas. Most companies were cooperative, and their refilings and new filings improved the accuracy of the data.

Other Data Sources

The U.S. Minerals Management Service (USMMS) supplied data on the quantity and value of natural gas production and the number of producing wells in the Gulf of Mexico Outer Continental Shelf. Volumes of extraction losses were reported on Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production." Heat (Btu) content extraction loss was estimated from data reported on Form EIA-64A and Form EIA-816, "Monthly Natural Gas Liquids Report." Volumes and prices of natural gas imports and exports were reported to the Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*. These data are nonproprietary and are filed annually by each individual or organization having authorization to import and export natural gas.

Report Methodology

Natural Gas Consumed as a Vehicle Fuel

Data on deliveries of natural gas delivered for use as a vehicle fuel were collected for the first time in 1990. In 1990 and 1991 deliveries of natural gas for vehicle fuel use were included with volumes delivered to commercial consumers. Beginning with the *Natural Gas Annual 1992*, vehicle fuel volumes are no longer included with commercial volumes.

Natural Gas Balancing Item

The natural gas balancing item represents the difference between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. It is calculated for each State as the result of a comparison between total reported supply and total reported disposition (Table 2). In the formula used, total reported supply is the sum of marketed production, net interstate movements, net

Figure A3. Form EIA-895

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U.S. DEPARTMENT OF ENERGY
Energy Information Administration
Washington, DC 20585

EIA-895

EIA-895, MONTHLY QUANTITY AND VALUE OF NATURAL GAS REPORT										
PART IV: ANNUAL SCHEDULE (to be completed when a calendar year of monthly reports has been completed)										
Enter the total number of producing gas wells in operation as of December 31 for the reporting year.										
Month	Gas and Condensate Wells	Oil Wells (Casinghead)	Total	Used for Repressuring, Etc.	Vented and Flared	Nonhydrocarbon Gases Removed	Natural Gas Used as Fuel on Leases	Marketed Production	Value of Marketed Production	Quantity of Marketed Production (Value Based)
January										
February										
March										
April										
May										
June										
July										
August										
September										
October										
November										
December										
Total										
PART V: COMMENTS										

movements across U.S. borders, and supplemental gaseous fuels supply. Total reported disposition is the sum of extraction loss, net storage changes (net additions to storage), and consumption. When this calculation results in a negative quantity for the balancing item it represents an excess of reported supply in relation to reported disposition, and positive quantities indicate the opposite situation.

The differences between supply and demand represent quantities lost, the net result of gas company conversions of flow data metered at varying temperature and pressure conditions to a standard temperature and pressure base, metering inaccuracies, the effect of variations in company accounting and billing practices, differences between billing cycle and calendar-period time frames, and imbalances resulting from EIA's merger of data reporting systems, which vary in scope, format, definitions, and type of respondents. The balancing items in individual States may also reflect the underreporting on Form EIA-176 of gas transported across State borders for the account of others by some interstate pipelines.

Natural Gas Processed and Extraction Loss

Extraction loss is the reduction in the volume of natural gas available for disposition resulting from the removal of natural gas liquid constituents at natural gas processing plants. It represents that portion of the "raw" gas stream that is transferred from the natural gas supply chain to the petroleum and natural gas liquids supply chain. Extraction loss does not include the reduction in volume resulting from the removal of nonhydrocarbon constituents or gas used as fuel, vented, flared, or otherwise disposed of within natural gas processing plants. Extraction loss also results in a reduction in the total heat (Btu) content of the natural gas stream equal to the heat content of the liquids extracted.

The Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production," collects data on the volume of natural gas received for processing, the total quantity of natural gas liquids produced, and the resulting shrinkage (defined as extraction loss in this report) from all natural gas processing- and cycling-plant operators. The quantity of natural gas received and liquids produced are reported by State of origin of the natural gas. Shrinkage volumes are calculated and reported by plant operators based upon the chemical composition of the liquids extracted using standard conversion factors specified in the form instructions. A description of the Form EIA-64A survey is presented in the EIA publication, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1996 Annual Report*.

The heat (Btu) content of liquids extracted is not reported on the Form EIA-64A. Therefore, in order to estimate the extraction loss heat content, data reported on the Form EIA-816, "Monthly Natural Gas Liquids Report," were used to determine the individual products contained in the total liquids

reported on Form EIA-64A. A description of the Form EIA-816 survey is presented in the EIA publication, *Petroleum Supply Annual 1996*, Volume II.

To estimate the quantities of individual products extracted in each State, data from the Form EIA-64A survey were used to determine the total liquids production, and data from the Form EIA-816 survey were used to estimate the quantities of the individual products contained in those total liquids.

The Form EIA-816 captures information on the quantity of individual components (i.e., ethane, propane, normal butane, isobutane, and pentanes plus) produced or contained in mixes of plant liquids as determined by chemical analysis. The volumetric ratios of the individual components to the total liquids, as calculated from the 12 monthly Form EIA-816 reports for each State, were applied to the annual total liquids production, as reported on the Form EIA-64A, to estimate the quantities of individual components removed at gas-processing plants (Table A4).

The heat (Btu) content of extracted liquids was estimated by applying conversion factors to the estimated quantities of products extracted in each State. These conversion factors, in million Btu per barrel of liquid produced, were ethane, 3.082; propane, 3.836; normal butane, 4.326; isobutane, 3.974; and pentane plus, 4.620. It should be noted that, at the State level, extraction losses are not necessarily related to State production. All gas processed in 9 States originated, or was produced in those States; but part of the gas processed in the other 15 States originated outside of the State in which the gas was processed. Gas produced from 9 States (Arizona, Indiana, Maryland, Missouri, New York, Oregon, South Dakota, Tennessee, and Virginia) was not processed.

For comparative purposes, the quantities of natural gas delivered to processing plants, total liquids extracted, and estimated volumetric and heat content extraction losses by State or origin of the gas (i.e., the State in which the gas was produced) are shown in Table A5.

Lease and Plant Fuel

Lease and plant fuel represent those quantities of natural gas used in well, field, and/or lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors) and as fuel in natural gas processing plants.

Lease fuel data were collected for report year 1996, on the Form EIA-895, "Monthly Quantity and Value of Natural Gas Report." Of the 30 States reporting on the Form EIA-895, 17 States reported quantities of natural gas used as lease fuel. Most of Nevada's marketed production is consumed as lease fuel, 11 million cubic feet. In the absence of reporting quantities on the Form EIA-895, the Form EIA-176 was used to estimate lease fuel quantities. Although EIA recognizes that lease data collected on the Form EIA-176 do not constitute a census or result from a statistically selected sample, the data

collected in the survey provide the best information available to the EIA for estimating such usage. To estimate lease use during 1996 (Table 14), several simplifying assumptions were made:

- The quantity of gas used for lease fuel was assumed to be a function of gross withdrawals of natural gas from gas and oil wells.
- The average proportion of company-owned on-system production reported as used in lease operations by respondents to the Form EIA-176 was assumed to be typical of the average use by all operators as a proportion of gross withdrawals.
- Average usage was calculated separately for Alaska and for the lower 48 States to reflect the distinctive field operations in Alaska, particularly on the North Slope.

Form EIA-176 respondents reported volumes of company-owned onsystem production amounting to 11 percent of 1996 gross withdrawals (36 percent of withdrawals in Alaska and 6.8 percent of withdrawals in the lower 48 States). Lease use reported by respondents averaged 0.02387 thousand cubic feet per thousand cubic feet of reported production in Alaska and 0.02283 thousand cubic feet per thousand cubic feet of reported production in the lower 48 States. The fuel-use estimates shown in Table 14 were calculated by applying the above ratios to the gross withdrawals from the various States (Table 3), not reporting lease use on the EIA-895.

Marketed Production

Marketed production of natural gas is taken from responses to Part IV of the Form EIA-895. It is the quantity of natural gas produced that is available for marketing and is reported in Tables 3 and 7. It refers to quantities of gas available after processes related to production are complete. These processes are repressuring, pressure maintenance, cycling, venting and flaring, removing nonhydrocarbon gases, using fuel on the lease.

Average wellhead prices are calculated from volumes and values reported in Part IV of the Form EIA-895. These data are shown as "Reported Wellhead Value" in Table 7. The volumes in this section refer to the actual amounts of natural gas reported to the States as sold.

In many States, the marketed production volumes are larger than the reported wellhead value volumes. Differences in these volumes generally result from differences in definition

and reporting requirements for separate data systems in the State. For example, while production quantities of federal, tribal, and State royalty gas are included in marketed production, some State reporting rules exclude these quantities from reported wellhead value volumes.

Census Divisions

The Bureau of the Census, U.S. Department of Commerce, has grouped the 50 States and the District of Columbia into Census divisions. Some of the tables and graphs in this report show data by Census division. These groupings are:

New England: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

Middle Atlantic: New Jersey, New York, and Pennsylvania.

East North Central: Illinois, Indiana, Michigan, Ohio, and Wisconsin.

West North Central: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

South Atlantic: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia.

East South Central: Alabama, Kentucky, Mississippi, and Tennessee.

West South Central: Arkansas, Louisiana, Oklahoma, and Texas.

Mountain: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.

Pacific Contiguous: California, Oregon, and Washington.

Pacific Noncontiguous: Alaska and Hawaii